

as enclosed to IPER

We claim:

- 5 1. A process for preparing lactones by catalytic carbonylation of oxiranes, wherein a catalyst system comprising

a) at least one cobalt compound as component A and

10 b) at least one metal compound of the formula (I) as component B,



(I)

15 where

M Al, Mg or Zn,

R hydrogen or C₁₋₃₂-alkyl, C₂₋₂₀-alkenyl, C₃₋₂₀-cycloalkyl, C₆₋₁₈-aryl, C₇₋₂₀-aralkyl or C₇₋₂₀-alkaryl, where substituents may be present on the carbon atoms other than the carbon atom bound to M,

20 X Cl, Br, I, sulfonate, oxide, C₁₋₃₂-alkoxide or amide,

n is a number corresponding to the valence of M and

x is in the range from 0 to n,

25 with n and x being selected so that the compound is uncharged,

is used as catalyst.

- 30 2. A process as claimed in claim 1, wherein the component A is selected so that a cobalt carbonyl compound is present under the reaction conditions.

3. A process as claimed in claim 1 or 2, wherein the component B is AlCl_xR_{3-x} where x is from 0 to 3 and R is C₁₋₆-alkyl.

- 35 4. A catalyst as defined in any of claims 1 to 3 with the exception of the combination Al(C₂H₅)₃/Co(acac)₃.

5. A process for preparing catalysts as claimed in claim 4 by mixing the components A and B.
6. The use of a catalyst as claimed in claim 4 in carbonylation reactions.